

**Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of:)	
)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of)	WT Docket No. 10-4
The Commission's Rules to Improve Wireless)	
Coverage Through the Use of Signal Boosters)	
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REPLY COMMENTS OF VERIZON¹

The comments on proposed changes to the Consumer Signal Booster rules confirm that the Commission should exercise caution regarding any changes to ensure that expanded use of signal boosters does not undercut the success of the current framework.² Specifically, the record demonstrates legitimate concern that certain rule changes could lessen the level of control that spectrum licensees can exercise over Consumer Signal Boosters. Yet licensee control is essential to protect consumers and networks from harmful interference under the 2013 industry-driven solution.³ For example, the proposals to encourage proliferation of Embedded and Wideband signal boosters may jeopardize the ability of licensees to protect and defend both their networks and their customers from harmful interference.

¹ In addition to Verizon Wireless, the Verizon companies participating in this filing are the regulated, wholly-owned subsidiaries of Verizon Communications Inc.

² See *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage through the Use of Signal Boosters*, Second Report and Order and Second Further Notice of Proposed Rulemaking, WT Docket No. 10-4, FCC 18-35 (Mar. 23, 2018) ("*Second FNPRM*").

³ See *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 1663 (2013) ("*2013 Report and Order*").

While commenters generally agree that the Commission could authorize expanded use of signal boosters with appropriate safeguards, the Commission should strengthen proposals related to labeling and registration of Embedded and Wideband Signal Boosters. Labeling and registration are integral to licensee control and a licensee's ability to identify and remedy the sources of harmful interference. Moreover, the record reflects the need for the Commission to consider carefully whether to add new spectrum bands to the Consumer Signal Booster framework and to give licensees the opportunity to comment whether a specific spectrum band fits within the Network Protection Standard.

The Commission should therefore take the following steps to ensure that expanded use of Consumer Signal Boosters does not jeopardize the success of the current framework:

- Create and host a central database for registration of Wideband Boosters accessible to all mobile licensees;
- Strengthen the labeling and registration requirements for both Embedded and Wideband Consumer Signal Boosters;
- Encourage manufacturers and distributors of Consumer Signal Boosters to supervise and/or incentivize registration; and,
- Continue to rely on notice-and-comment rulemaking proceedings to consider adding new spectrum bands to the Consumer Signal Booster framework.

I. THE COMMISSION SHOULD CREATE AND HOST A CENTRAL REGISTRY FOR WIDEBAND SIGNAL BOOSTERS.

Verizon supports the Commission's proposal to eliminate the "personal use" restriction on Wideband Signal Boosters as long as the Commission adopts a reasonable procedure for

booster owners to register them with multiple wireless licensees.⁴ The record indicates that owners of Wideband Signal Boosters will have difficulty in registering with multiple mobile provider networks. Many commenters therefore recommend that the Commission create and host a central database registry for all owners of Wideband Boosters.⁵ As AT&T explained, “the Commission can best promote its twin objectives of enabling wideband Consumer Signal Booster use and maximizing compliance with registration requirements by adopting a centralized, one-step registration system for wideband Consumer Signal Boosters.”⁶

In the *Second FNPRM*, the Commission identified the problem: a Wideband Booster can be placed into service by a consumer with no relation to the mobile licensee on whose network the booster may operate.⁷ Eliminating the personal use restriction on Wideband Boosters would thus require Wideband Booster owners to register with a mobile licensee who is not their mobile service provider and to register with multiple such providers.⁸ As CTIA notes, expecting each Wideband Booster owner to fulfill this requirement “is impractical at best and more likely infeasible.”⁹ Moreover, “the challenges associated with the Commission’s proposal are amplified for mobile signal boosters.”¹⁰ Registering a Wideband Booster embedded in a vehicle with all networks near which the vehicle may travel would be an impossible task.¹¹

⁴ See, e.g., Comments of Verizon, at 10-12; Comments of Surecall, at 4-6; Comments of Enterprise Wireless Alliance, at 2-3; cf. Comments of Wilson Electronics, at 3-4. *But see* Comments of Nextivity, at 7-8 (recommending that lifting the personal use restriction from Wideband Boosters and its “complex interference issues” should be considered separately from other issues in the *Second FNPRM*).

⁵ See Comments of AT&T Services, at 10-11; Comments of CTIA, at 10; Comments of Ad Hoc Telecommunications Users Committee, at 5-6; Surecall at 6-7; Verizon at 11-12.

⁶ AT&T at 10.

⁷ See *Second FNPRM* ¶¶ 43-44.

⁸ See AT&T at 9-10; CTIA at 9.

⁹ CTIA at 9.

¹⁰ AT&T at 10.

¹¹ See Verizon at 11; AT&T at 10.

For these reasons, the record supports that the Commission require owners of Wideband Boosters to register their boosters in a central database, accessible by all mobile providers. The most logical host for such a database is the Commission, and it should use the registration model already established for Class B Signal Boosters.¹² A neutral registrar such as the Commission is preferable when Wideband Booster registrants have no subscriber relationship with the wireless licensees on whose networks the booster will operate.¹³ In addition, since booster manufacturers are the beneficiaries of expanded use of Consumer Signal Boosters, the cost of the registry should be borne by booster manufacturers, for example, through fees collected under the equipment certification process.

As the Commission recognized when it adopted the 2013 Consumer Signal Booster framework, registration serves a critical goal: to “facilitate rapid resolution of interference, if it occurs.”¹⁴ The central registry will support this goal by offering Wideband Booster owners a one-step registration process, without the need to research which operators to register with and how to register with multiple operators. Given the concerns in the record about registering Wideband Boosters with multiple licensees, the Commission should not lift the personal use restriction on Wideband Boosters until it has implemented the online registry described above and the registry is accessible and usable by consumers and mobile operators.

II. THE COMMISSION SHOULD STRENGTHEN LABELING REQUIREMENTS FOR EMBEDDED SIGNAL BOOSTERS.

Verizon and other commenters support the Commission’s proposal to require an “alternative advisory” for Embedded Signal Boosters. But also like other parties, Verizon

¹² See AT&T at 10-13; *2013 Report and Order* ¶¶ 161-166; 47 C.F.R. § 90.219(d)(5).

¹³ See CTIA at 10 (“The fact that Wideband and Mobile Consumer Signal Boosters will require use of spectrum by consumers that are *not* subscribers for portions of the operation should compel the Commission to be involved in the registration process.”).

¹⁴ *2013 Report and Order* ¶ 97.

recommends that labeling on the booster itself and/or the vehicle is necessary to ensure consumers receive the Commission’s registration and operational information.¹⁵ The alternative advisory “alone is not likely to be effective” in informing consumers in all potential situations.¹⁶ For example, if the advisory is separated from the booster, it would be difficult “to track the booster once it is removed from a vehicle and/or the vehicle changes hands.”¹⁷

The risk that consumers will not receive the registration and operational requirements is of particular concern for boosters embedded in vehicles. Embedded Boosters are mobile. Increased deployment of vehicles with Embedded Boosters may significantly affect the ability of spectrum licensees to trace, identify, and, when needed, disable the boosters.¹⁸ Even under the current rules, if for some reason the Embedded Booster causes harmful interference, it is difficult for the network operator to detect an interfering booster in a moving vehicle whether or not the user has registered the booster with that provider. Requiring multiple forms of advisories will help ensure that the users of these boosters receive, retain, and pass on the information.¹⁹

As the Commission recognized in 2013, labels on Embedded Boosters are necessary to ensure “consumers are well aware of the specific requirements that attach to their use of a Consumer Signal Booster.”²⁰ In addition to the alternative advisory for Embedded Boosters, the Commission should therefore require a label attached to the vehicle itself and also retain the requirement to label the booster. Attaching a label on or within the vehicle increases the

¹⁵ See Surecall at 11; Nextivity at 7; AT&T at 4-7; CTIA at 6-7; Verizon at 7-8.

¹⁶ CTIA at 6.

¹⁷ AT&T at 5.

¹⁸ See Verizon at 6-7.

¹⁹ Collecting the make and model of the vehicle in which the booster is embedded, the manufacturer-supplied Vehicle Identification Number, and government-issued license number at registration will also improve the ability of mobile network providers to track and trace an Embedded Booster when necessary to remedy harmful interference. See Verizon at 9.

²⁰ 2013 Report and Order ¶ 45.

likelihood that the purchaser will retain and have access to this important information regarding the Embedded Booster and the Commission's operational requirements after the purchase date.²¹ Maintaining the requirement to label the booster itself will ensure that the advisories are available if the vehicle owner swaps out the booster at some later point in time.²² The combination of the alternative advisory, a vehicle-attached label, and a label on the booster will best effectuate the Commission's original regulatory requirements for Embedded Boosters.

III. THE COMMISSION SHOULD ENCOURAGE MANUFACTURERS TO OFFER INCENTIVES TO CONSUMERS WHO REGISTER THEIR BOOSTERS.

The Commission requires registration of Consumer Signal Boosters, and mobile providers need registration to exercise control over boosters. Yet there is no direct incentive in the Commission's rules for consumers to register the boosters they own and operate. Failure to register could become a significant problem as the Commission modifies the 2013 framework to facilitate expanded use of boosters.

Several comments addressed this concern. CTIA recommended that "parties selling vehicles with embedded Consumer Signal Boosters should be directly responsible for educating consumers about the embedded boosters as well as registering the product itself, rather than simply informing the consumer."²³ Similarly, AT&T explained that applying the registration rules to manufacturers or automobile dealers, rather than consumers, would "encourage compliance with applicable registration requirements."²⁴ Verizon suggested that point of sale is an ideal place and time for consumers to register Embedded Boosters because all the required information is available at that time.²⁵

²¹ See CTIA at 6-7; Verizon at 7-8.

²² See AT&T at 5-6.

²³ CTIA at 6.

²⁴ AT&T at 6.

²⁵ See Verizon at 9-10.

Manufacturers and distributors have a relationship to consumers who purchase Consumer Signal Boosters and so could provide registration assistance and/or a financial incentive for registration. For example, a manufacturer or distributor could complete registration for the consumer or offer a modest rebate for consumers who submit proof of registration. The Commission should encourage manufacturers and distributors of Consumer Signal Boosters to supervise and/or incentivize registration by consumers to ensure that the 2013 framework continues to operate successfully even as the use of boosters expands.

IV. THE COMMISSION SHOULD AUTHORIZE BOOSTERS IN ADDITIONAL SPECTRUM BANDS ONLY THROUGH NOTICE-AND-COMMENT RULEMAKING.

As Verizon explained, each commercial spectrum band may have unique characteristics that require review and consideration in a rulemaking proceeding before the Commission authorizes use of that band in Consumer Signal Boosters.²⁶ The record confirms this observation. For example, AT&T, which holds a substantial number of WCS spectrum licenses, and parties from the aerospace industry and satellite radio service objected to use of WCS for Consumer Signal Boosters because of the considerable effort required to coordinate spectrum usage among WCS licensees and licensees of neighboring spectrum bands.²⁷ Similarly, Verizon explained that millimeter wave spectrum would not likely fit within the current Network Protection Standard.²⁸ And T-Mobile raised concerns regarding interference into 600 MHz licensees during the post-incentive auction repacking process.²⁹

²⁶ See Verizon at 3-5; *see also* CTIA at 3-4.

²⁷ See AT&T at 3-4; Comments of Aerospace Flight Test Radio Coordinating Council, at 2-3; Comments of Sirius XM Radio, at 4-7.

²⁸ See Verizon at 4-5.

²⁹ See Comments of T-Mobile USA, at 2-3.

The Commission should therefore resist calls to initiate a process for adding spectrum bands to Consumer Signal Boosters that “avoids the need for additional, future rulemakings.”³⁰ Instead, for additional spectrum bands, the Commission should open a rulemaking, request comments, and then decide whether and how it may expand the Consumer Signal Booster framework with that spectrum.

V. CONCLUSION.

The Commission should adopt the rules and policies described in Verizon’s Comments and these Reply Comments to ensure that its Consumer Signal Booster rules continue to protect wireless networks and subscribers from harmful interference.

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Respectfully submitted,

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June 18, 2018

³⁰ *Second FNPRM* ¶ 19; *cf.* Wilson Electronics at 2-3; Nextivity at 2-4; Surecall at 9-10; Enterprise Wireless Alliance at 3-5.